

REMARKS

This is in response to the final rejection of April 29, 2005. Reconsideration and allowance is respectfully requested.

Reconsideration of the rejection of claims 1 and 3-11, 14-17 and 19 is respectfully requested.

Claim 13 was rejected under 35 U.S.C. Section 112, but it has been cancelled and the features have been placed into claim 1.

Claims 1, 3 and 14 were rejected under 35 U.S.C. 102(b) as anticipated by the Hiyashi publication.

However, it is respectfully pointed out that claim 1 has now been amended that provide for a rigid mandrel, in a housing bore with the mandrel having two sections and the bore having two portions. Specifically, one of the sections of the mandrel supports a resistance wire that is wound around and supported on that section, and the other one supports the end of the mandrel in rigid potting material so that it is cantilevered. In addition, the cantilevered section is directly supported in the particulate material that cushions the temperature sensing element and the first section of the mandrel when the thermometer assembly is subjected to vibration.

Hiyashi does not show the temperature sensing element wound onto the mandrel, and in fact, as pointed out before the part that the Examiner indicates as a mandrel is merely a divider wall between two separate longitudinally extending and parallel bores.

Claim 1 clearly, it is respectfully submitted, differentiates by specifying that there is a "resistance wire temperature sensing element helically wound onto and supported along a length" of the first section of the rigid mandrel. Further, the second section is supported in a bore to form a rigid structural support for the second rigid mandrel section, and the first rigid mandrel section is cantilevered from the second

mandrel section. Again, it is the first mandrel section that has the resistance wire wound on it, specifically, so that it is supported by the mandrel and the particulate material specifically forms a cushion for that assembly.

Claims 1, 9, and 12-13 were rejected as being anticipated by the Takahashi et al. publication. Again, the Takahashi structure does show a thermistor 11, which is a semi-conductor ceramic material, and is not a wire. It has electrodes wires 12 and 13 protruding from the ends, but this is not a rigid mandrel support for a resistance wire wound onto a first section of a mandrel, with a second mandrel section being held in a rigid potting material. Further, claim 1 defines the rigid mandrel section that supports the resistance wire as being cantilevered from the second section and cushioned by the surrounding particulate material which actually surrounds that resistance wire element, and there is no intervening metal tube 40, which is called a "metal case" between the resistance sensing element and the particulate material.

Thus, it is respectfully submitted that claim 1 is clearly allowable over the Takahashi patent.

Dependent claim 9, is allowable therewith, it is respectfully submitted. Claims 12 and 13 have been canceled.

Claims 1, 3, 12-17, and 19 were also rejected as anticipated by the Berger patent.

In claim 1, again, the reasons set forth above distinguish over the Berger patent both from an anticipation standpoint, as well as showing non-obviousness. In claim 1, a rigid mandrel has the resistance wire wound on and supported by a first section of the mandrel, and this resistance wire and the first section of the mandrel are supported in a cushioning particulate material while the second section of the mandrel is rigidly held to cantilever out the first section. In Berger, the sensing element 26, which is disclosed as a coil is not supported on a mandrel. Again,

referring to column 7, lines 22 and following in Berger, it indicates the sensing element 24 is single wire in the form of a continuous coil 26, but it is not supported on a mandrel.

Further, if one looks at the FIG. 4 of Berger, it can be seen that the coil is supported on a lead wire 22 at one end, and at the end plug 44 at the other, and there is no support for the coil in between. In the present invention, the temperature sensing wire is supported on a rigid mandrel section and in turn the cantilevered mandrel section and the wire are supported on a cushioning particulate material, while the base or second section of the mandrel is rigidly supported in the housing.

In the field of sensors, the connector section 29 is not a temperature sensing section, but is merely a connection to a lead. It is a fastening point for the coil as defined in the specification of the Berger et al. patent. Thus, Claim 1 and dependent claims 3 and 14 are believed allowable.

Claims 15, 16 and 17, as well as claim 19, were also rejected as being anticipated by the Berger et al. patent.

The Office Action indicates that Berger et al. disclosed the claimed invention in Figure 2, indicating that the cited patent showed a bore in a housing 15, and a "temperature sensing assembly 22, 25, 22 resistance temperature sensing element 25, mandrel 22 having two sections, the second section in rigid potting material 16,17 and particulate material 30 around the first section". In responding to the previous arguments, the Office Action indicated that the Applicant had argued that item 22 in Berger et al. was not a mandrel because it is part of the circuit. However, it is respectfully pointed out that the item 22 in Berger et al. is a lead to the temperature sensor coil shown at 25 and 26, and that as such, as specified in claim 15, the resistance temperature sensing element is not "encircling and supported entirely on the exterior surface of the first section" of the mandrel.

It is respectfully requested that the feature of support for the temperature sensing element be considered in regard to claim 15. The amended language makes it clear that the temperature sensing element is supported on the first mandrel section, and it also should be clear that this teaching is different from Berger et al., wherein the actual coiled temperature sensing element is not supported on any mandrel. The actual coiled temperature sensing element shown in Berger et al. is supported in particulate material, but not entirely on a mandrel.

In regard to claim 17, the resistance temperature sensing element is now specified as a wire wound around and supported entirely on the outer surface of the first section of the mandrel, to again clearly distinguish from the Berger et al. reference and any of the other references cited. Further, there are distinguishing features of having a shock absorbing particulate material that cushions the first section of the mandrel. The first mandrel section and thus the resistance temperature sensing element are held as a cantilevered beam by the rigidity potted second section of the mandrel in claim 17.

Again, the Berger et al. reference does not teach the support of the open coil temperature sensing element 26 on any mandrel. Thus, it is respectfully submitted that claim 17 is allowable, prima-facie, and that its dependent claims are thus allowable.

Claims 1, 15-17 and 19 were rejected as obvious over Berger et al. It is believed the changes made to independent claims 1, 15 and 17, as outlined above, clearly show non-obviousness constructions that are not shown or suggested by Berger et al.

Claims 4-8, 10 and 11 depend from claim 1 and are allowable therewith.

Applicant has submitted an Information Disclosure Statement including a European Search Report for a corresponding

PCT application, and it is believed quite clear that the references do not anticipate the use of a rigid potting material to hold a section of the mandrel, while another section, which has the resistance sensing element supported on it is held as a cantilevered beam and in a particulate cushioning material.

Favorable action is therefore respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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